

SAXS and WAXS experiments with extreme sample environments

The technology for time-resolved SAXS and WAXS experiments has so much improved over the last years that the development emphasis has shifted towards the quality of the sample environments used in these experiments. At the Dutch-Flemish beamline at the ESRF research is performed using complicated sample environments which partially are used to mimic industrial processing conditions but partially also are used to study materials under extreme conditions. As examples of the first type we can mention for example polymer film blowing and extrusion equipment. However, in this presentation I will only show briefly some results of this type of experiment but will for the rest concentrate on two other experiments. The first the devitrification of a low expansion coefficient glass at temperatures over 1000 C. The second example will deal with the rotational behaviour of smectic liquid crystals due to magnetic fields up to 10 Tesla.

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